

IN MATTERS BEFORE THE UNITED STATES DISTRICT COURT
RELATED TO NATIONAL FEEDS AND VARIOUS MINK PRODUCERS

Including but not necessarily limited to
the following two matters:

**KEITH JONSSON, MICHAEL
JONSSON, CEDAR VALLEY FUR
FARM, LLC, KENT GRIFFETH,
MOUNT SMART ENTERPRISES,
LLC, and ROGER GRIFFETH.**

Plaintiffs

v.

NATIONAL FEEDS, INC.

Defendant

-and-

**KOLBY STEMBRIDGE, KOLBY
STEMBRIDGE MINK RANCH,
GLAYDE W. STEMBRIDGE,
GLAYDE'S MINK RANCH, GWS
HOLDINGS, LLC, WENDELL
STEMBRIDGE, GW FUR FARM,
LLC.**

Plaintiffs

v.

**NATIONAL FEEDS, INC, RANGEN,
INC, RALCO NUTRITION, INC,
ZINPRO CORPORATION, and DOES
1-V.**

Defendant

* * * * *

Report of Cathy A. Brown, VMD, PhD, Dipl ACVP

I am a Professor of Veterinary Pathology in the Athens Diagnostic Laboratory and the Department of Veterinary Pathology at the College of Veterinary Medicine of the University of Georgia with more than 20 years of experience in the study of diagnostic pathology with special emphasis on nephropathology. I am board-certified in Veterinary Pathology by the American College of Veterinary Pathology and Pathology Section Chief of the Athens Veterinary Diagnostic Laboratory. I provide pathology diagnostic service to veterinarians on clinical cases of all veterinary species and participate in the training of pathology residents and graduate students. I also teach veterinary students during their clinical training. I am a member of the

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renal pathology initiative of the World Small Animal Veterinary Association and provide nephropathology service for veterinarians nationally via the Texas A&M Renal Pathology Service. I have published refereed articles and several book chapters related to renal pathology as well as the effects of nutrition on kidney disease and have also published an article related to Aleutian Mink Disease. I was the primary author of a manuscript which was the first published report documenting the nationwide, food-associated, melamine nephrotoxicity in 2007. I have been an invited speaker on the topic of renal pathology at the annual scientific meetings of the American College of Veterinary Pathology, the American College of Veterinary Internal Medicine, and the American College of Zoological Medicine. Through my education, training, review of the medical literature and other professional activities, I am familiar with pathologic and pathophysiologic changes associated with disease in animals, and have a particular expertise in veterinary nephropathology.

I have reviewed pertinent scientific literature as well as the pathology reports and associated kidney and cardiac muscle tissue slides for 28 mink which were conveyed to us on 14Dec11 by Dr. Peter Vanderloo of the Wisconsin Veterinary Diagnostic Laboratory (Table 1).

I intend to render opinions in the area of renal lesions and diseases and cause of death, specifically addressing the question as to whether vitamin E and/or selenium deficiency was a contributor to death and illness in mink upon which these legal matters focus. My opinions are in part based on my review of the above material and are also based on my education and training, on my knowledge of the relevant literature, on my understanding of the facts in this particular case, and on my experience and expertise in the field of veterinary medicine, veterinary pathology, and nephropathology.

My opinion is that the lesions observed in these mink are not suggestive of nutritional myopathy associated with Vitamin E and/or Selenium deficiency. Expected lesions present in skeletal and/or myocardium (muscle fragmentation, vacuolization, mineralization, mild inflammation) were not observed in any of the examined mink. Occasional myofiber eosinophilia and swelling is a common incidental finding which may be associated with fixation or terminal ischemia. Findings of mild muscle degeneration are also common in animals with chronic disease.

Some animals, particularly those with more severe renal lesions of chronic interstitial nephritis and presumptive glomerulonephritis (lesions classically associated with Aleutian Mink

Disease), had red-brown material or granular casts within renal tubules. In several of the reports this material was interpreted to be myoglobin (myoglobinuric or "globinuric" nephrosis), and was taken as evidence of an underlying nutritional myopathy. However, animals with myoglobinuric nephrosis typically have evidence of severe muscle degeneration characterized by muscle fragmentation, vacuolization, or mineralization; these lesions were not identified in any of these mink. The identity of this renal intratubular material is unclear, but in most cases it appears to be protein and necrotic cellular debris. A third possibility for some of this intratubular material is hemoglobin (causing hemoglobinuric nephrosis). Special staining of renal slides for hemoglobin and myoglobin can be used to detect these pigments, although this stain will not differentiate between them. Hemoglobinuric nephrosis may occur in animals with intravascular hemolytic anemia. While it is unknown if any of these mink were anemic, the marked splenic extramedullary hematopoiesis observed in several mink is an expected finding in animals with hemolytic anemia.

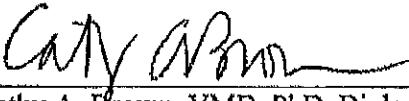
I hold all of my opinions with a reasonable degree of medical probability.

This report is not intended to be a complete or final statement of my opinions, and I reserve the right to expand, modify or otherwise amend my opinions as the discovery process proceeds.

My compensation for offering this expert evaluation is \$250 per hour plus any related travel fees and expenses. While I have been asked to provide testimony as the pathologist of record on 3 cases presented to the College of Veterinary Medicine while I was on duty during the past decade, this is the first time I have otherwise served as an expert witness in a legal matter.

Table 1: Microscopic slides of tissues, accession records, and pathology reports for the following accessions were provided in December 2011 by Dr. Peter Vanderloo of Wisconsin Veterinary Diagnostic Laboratory

Accession Date	Listed Owner	Accession #	Animal
12/9/10 10:15am	Kent Griffeth	M10-35539	Mink 1
			Mink 2
12/9/10 10:17 am	Keith Jonsson	M10-35540	Mink 1
			Mink 2
			Mink 3
			Mink 4
			Mink 5
			Mink 6
12/21/10 9:16am	Kent Griffeth	M10-36416	Mink 1
			Mink 2
2/1/11 3:29 pm	Colby Stembridge	M11-03166	Mink 1
			Mink 2
			Mink 3
			Mink 4
			Mink 5
			Mink 6
2/1/11 3:31pm	Roger Griffeth	M11-03167	Mink 1
			Mink 2
			Mink 3
			Mink 4
2/23/11 9:44am	Roger Griffeth	M11-07992	Mink 1
			Mink 2
			Mink 3
			Mink 4
	Kent Griffeth	M11-07992	Mink 5
			Mink 6
			Mink 7
			Mink 8

 12/3/12
Cathy A. Brown, VMD, PhD, Diplomate (Pathology, ACVP)

Cathy A. Brown
CURRICULUM VITAE.

1. ACADEMIC AND PROFESSIONAL HISTORY:

80% service, 15% research, 5% teaching EFT

1.1. Education:

<u>Degree</u>	<u>Field of Study</u>	<u>Year</u>	<u>Institution</u>
PhD	Anatomic Pathology	1990	University of Georgia, Athens, GA
VMD	Veterinary Medicine	1982	University of Pennsylvania
BS	Animal Science	1978	University of Massachusetts

1.2. Academic and Professional Positions:

- 2007-present: Professor, Athens Veterinary Diagnostic Laboratory and the Department of Pathology, Pathology Section Head
2000-2007: Associate Professor, Athens Veterinary Diagnostic Laboratory and the Department of Pathology, College of Veterinary Medicine, University of Georgia, Athens, GA.
1995-2000: Assistant Professor, Athens Veterinary Diagnostic Laboratory and the Department of Pathology, College of Veterinary Medicine, University of Georgia, Athens, GA
1990-1995: Instructor, Athens Veterinary Diagnostic Laboratory and the Department of Pathology, College of Veterinary Medicine, University of Georgia, Athens, GA
1985-1990: Pathology Residency and PhD, University of Georgia, Athens GA
1982-1985: Veterinary Practitioner, Ambery Animal Hospital, Atlanta, GA

1.3. Specialty Board Certification:

Anatomic Pathology, American College of Veterinary Pathologists (1992)

1.4. Honors and Awards:

Outstanding Laboratory Service Award, University of Georgia, College of Veterinary Medicine, Award given to an individual who has provided excellence in laboratory support for field or hospital investigations. 2009.

Best Brief Communication, AAVLD for the manuscript "Outbreaks of renal failure associated with melamine and cyanuric acid in dogs and cats in 2004 and 2007. 2008.

1.4.1 Post-graduate awards:

"Control of enterohemorrhagic *E. coli* O157:H7 in cattle by probiotic bacteria", Patent #5,965,128, granted 1999. Inventors: Doyle MP, Zhao T, Harmon BG, Brown CA

1.5. Advanced Training:

A Microscope Workshop. Update on Renal Biopsies in Medical Renal Diseases, Armed Forces Institute of Pathology, Washington, DC., October 1-4, 1996 and April 5-7, 2002
These training courses reviewed the pathology of medical renal diseases, and are intended for M.D. pathologists and nephrologists who evaluate kidney biopsies in their practice. This additional training has been invaluable in assessment and understanding of renal lesions seen in diagnostic cases in animals. Currently, the Veterinary International Renal Interest Society has launched a renal initiative, of which I am a member, to adopt and adapt M.D. renal nephropathology glomerular classifications to veterinary renal nephropathology.

Teachers of Infectious Diseases and Laboratory Diagnostic Course, United States Department of Agriculture, Animal and Plant Health Inspection Service, November 15-19, 1993. This advanced training, received at Plum Island, gives participants expertise in the recognition and diagnosis of foreign animal diseases.

1.6. Professional Memberships:

American Association of Veterinary Laboratory Diagnostician
American College of Veterinary Pathologists
American Veterinary Medical Association
Society of Veterinary Nephrology and Urology

2. SERVICE ACTIVITIES:

2.1. Laboratory Service.

Biopsy Service

Biopsy cases, ranging from 10 - 20 cases per day, are assigned on a daily basis. Biopsy samples are received from a wide variety of animal species including but not limited to dogs, cats, birds, exotic species, food and fiber animals, and horses. These animals are owned by the Georgia public, and are submitted through their referring veterinarians. These samples may be from live animals awaiting veterinary therapy based on the biopsy results, or they may be obtained from deceased animals in order to determine cause of death. All results are entered in the UVIS computer system, and a report is sent to the submitting veterinarian. A typical report includes a detailed histologic description of the submitted tissue(s), a diagnosis(es), and a comment concerning such features as expected biologic behavior, completeness of excision, or disease pathogenesis.

Necropsy Service

Entire animals are also submitted for necropsy. Dr. Brown is on necropsy duty approximately 15-30 days per year, as well as on weekend/holiday necropsy duty approximately 10 times a year. Components of a necropsy are gross dissection, sample collection, assignment of tests needed for a definitive diagnosis (such as virology, bacteriology, or toxicology), histopathology, and interpretation of these results and generation of a final report. Necropsy cases often involve herd health issues, and are an important means of supporting the agricultural industry in Georgia.

Potential zoonotic or emerging diseases in the Georgia may also be identified through the biopsy and necropsy services.

Telephone consultations with veterinarians concerned these test results or questions about sample submission occur on a daily basis. Approximately 3-5 telephone conversations with submitting veterinarians occur daily.

Numbers of cases completed; 2000-2007

July 2006 through June 2007: 109 necropsies and 2,846 biopsies/mail-in necropsies

July 2004 through June 2005: 137 necropsies and 3,559 biopsies/mail-in necropsies

July 2003 through June 2004: 92 necropsies and 2,632 biopsies/mail-in necropsies

July 2002 through June 2003: 87 necropsies and 2,563 biopsies/mail-in necropsies

July 2001 through June 2002: 93 necropsies and 2,191 biopsy/mail-in necropsies

Renal Biopsies

Interpret biopsies and mail-in necropsies submitted with a history of renal or urinary tract abnormalities. Also consult with other pathologists when renal lesions are encountered in their cases. Also evaluate kidney biopsies submitted through the veterinary teaching hospital. Member of the Texas Veterinary Renal Diagnostic Service since Jan. 2011, responsible for the ultrastructural evaluation (electron microscopy) and interpretation of renal biopsies from proteinuric dogs and cats.

Head of Pathology Section

2002 – present. The histopathology section is responsible for tissue sectioning for further processing the approximately 20,000 biopsy/mail-in necropsy cases received each year. Responsible for overseeing the technical staff in the cutting in area. Also established and instituted guidelines for handling rush cases, gross examinations of various samples, and samples submitted for a second opinion. Also monitors case distribution to ensure timely reporting of these cases. Responsible for scheduling off-service time for pathologists and contract pathologists as needed. Responsible for developing (or directing development) of pathology SOPs and for communication with submitted veterinarians as problems/issues arise. For the past two years I have also assumed responsibility for overseeing necropsy room staff and handling necropsy room issues as they arise.

2.2. Resident Instruction and continuing education:

2.2.1. Professional students:

1. Diagnostic Pathology (VPP 540), 1995-present

Necropsy techniques and interpretation, 3-5 students; approximately twenty-two 4 hr. sessions annually

2. Diagnostic Laboratory Block Rotation May 2003 – June 2004

The Diagnostic Laboratory Block Rotation was a six- hour extension of the Necropsy Block Rotation initiated by Dr. Brown. It was intended to provide Senior Veterinary Students with a better concept of "What a veterinary diagnostic laboratory does" and "How they can best use the laboratory in practice once they graduate".

2.2.2 Pathology Resident Training:

1. Microscopic pathology of the urinary system (VPAT 8100), 1998 – present; 4-8 students/class; 6 hrs.
2. Advanced Pathology, urinary system portion (VPAT 8110), 2006-present; 4-8 students/class; 6 hrs
3. Diagnostic Oncology, Urinary system neoplasia (VPAT 8130) 2003 – present; 4-8 students; 2 hrs.
4. Physiology Graduate Student instruction:
The molecular basis of renal physiology (VPHY 8120), Acute and chronic kidney diseases, 2003, 2007, 6-8 students (clinical medicine residents); 2, 5 hrs respectively.
5. Undergraduate Odyssey Course - Co-taught with Dr. Scott Brown

The Local Food Movement: Myths and Realities FYOS1001 (12SP-81981)

2.2.3. Thesis and dissertation committees

Ph.D. in Pathology
Byeugjai Kim (2007-2008)

Ph.D. in Physiology/Pharmacology
Katie Surdyk (2002-2009)
Cyclooxygenase inhibitors and canine renal hemodynamics

M.S. in Physiology/Pharmacology
Trey Newell (1999-2001)
Effects of angiotensin-converting enzyme inhibition in cats with chronic renal insufficiency.

Ph.D. in Pathology
Suzana Tkalcic (1997-2001)
Enterohemorrhagic *E. coli* in cattle. I. Effect of diet on the rumen microenvironment and fecal shedding of *E. coli* O157:H7. II. Effect of probiotic administration on the carriage and fecal shedding of enterohemorrhagic *E. coli* in calves.

2.3. Service on Grants and Publications:

2.3.1. Editorship or editorial board member of journals

Ad hoc reviewer for:

Scientific Reviewer, Journal of Veterinary Diagnostic Investigation, 2007-present
Scientific Reviewer, Journal of the American Veterinary Medical Association
Scientific Reviewer, Journal of Wildlife Diseases, 2005
Scientific Reviewer, Australian Veterinary Journal, 2004-present
Scientific Reviewer, Journal of Veterinary Internal Medicine, 2004-present
Scientific Reviewer, Veterinary Record, 2006 - present
Scientific Reviewer, Journal of the American Animal Hospital Association, 2008
Scientific Reviewer, Histology and Histopathology, 2010

Scientific Reviewer, Journal of Veterinary Pathology - 2011-present
Scientific Reviewer, Journal of Feline Medicine and Surgery - 2012

2.4. Public and University Service:

Service on departmental, college, or university committees:

University Committees:

2007, Chair 2008 University Review Committee for Promotion and Tenure

College Committees:

2007-Present Ethics Committee

2003-Present Educational Resources & Computer Advisory Committee
Chair, 2005.

2001-2002 Committee to Recommend Guidelines for Promotion of Non-Tenure
Track Clinical Professors, College of Veterinary Medicine.

1995-1999 Veterinary Medical Experiment Station Research Committee, College
of Veterinary Medicine, University of Georgia, Athens, GA, 1995-
1999. Chair, 1997.

1997-1998 Companion Animal Grant Review Committee, College of Veterinary
Medicine, University of Georgia, Athens, GA.

1996 Search Committee for Associate Dean for Services, College of
Veterinary Medicine, University of Georgia.

3.1.1 RESEARCH ACTIVITIES

3.1 Areas in which research is done

The main focus of my research is experimental and naturally occurring chronic renal disease, primarily in dogs and cats. The emphasis of this research is on the pathogenesis of progression and identification of strategies to minimize continued renal injury (dietary interventions, antihypertensive therapy).

Characterization of disease caused by *Leptospira grippotyphosa* infection in dogs, with emphasis on the acute and subacute stages of this disease,
Enterohemorrhagic *Escherichia coli* carriage in cattle and identification of methods to decrease carriage of this pathogen

3.2. Grants and collaborations

1. Great Ape Heart Project meeting February 6-8, 2011, Zoo Atlanta, Atlanta, GA.
Closed event for invited participants to discuss cardiovascular disease in great apes

2. Schmiedt C, Brown CA, Hurley D. Effect of an aldosterone receptor blocker, spironolactone, on chronic allograft nephropathy in rats. University of Georgia Veterinary Medical Experiment Station, \$15,000, 2008-2009.
3. Brown C, Labato MA. Pathology of glomerulonephritis in dogs. Cummings School of Veterinary Medicine, Tufts University, retrospective study (no dedicated funds), 2008.
4. Schmiedt C, Brown CA, Brown SA. Effect of cold ischemic injury on post operative hypertension in cats undergoing renal transplantation. Veterinary Medical Experiment Station, \$11,504, 2007-2008.
5. Brovida C IT, Brown C USA, Cowgill L USA, Elliot J UK, Goldschmeding R NL, Heine R NO, Lees G USA, Jansen J NO, Polzin D USA, Shirota K Japan, Spangler B USA, Vaden S USA, van Dongen A NL. World Small Animal Veterinary Association (WSAVA) International Renal Standardization Study Group, Bayer Animal Health and Hills Pet Nutrition, budget unspecified (approx \$400,000?) 2008-2010.
6. Elliot J, Brown CA, Brown SA. Does mild proteinuria activate inflammatory cytokines in the tubulointerstitial compartment of the feline kidney? Novartis, \$24,000, 2007-2008.
7. Elliot J, Brown CA, Brown SA. Histologic features of naturally occurring chronic renal disease in cats with and without hypertension. Funded by UK charitable trust, Department of Veterinary Basic Sciences, The Royal Veterinary College, University of London, budget unknown, 2003-present.
8. Brown S, Brown C. Role of urotensin II in feline systemic hypertension, GlaxoSmithKline, \$135,000, 2004-2006.
9. CA Brown, BG Harmon, MP Doyle, T Zhao. Effect of diet and rumen microenvironment on the proliferation and fecal shedding of *E. coli* O157:H7 in calves. International Life Sciences Institute North America. \$66, 247. 1996-1998.
10. CA Brown, SA Brown, BG Harmon, T Zhao, MP Doyle. Pathogenesis of bovine derived verotoxigenic *E. coli* in a canine model. Veterinary Medical Experiment Station. \$10,178. 1996-1997.
11. BG Harmon, CA Brown, T Zhao, MP Doyle. Carrier state for shiga-like toxin-producing *Escherichia coli* in cattle. USDA. \$69,734. 1995-1997.
12. JK Fischer, MP Doyle, CA Brown, T Zhao. Experimental inoculation of white-tailed deer with *E. coli* O157:H7. Veterinary Medical Experiment Station. \$7,745. 1996-1997.
13. SA Brown, DR Finco, JA Barsanti, WA Crowell, CA Brown. Obesity, systemic hypertension, and progressive renal disease in dogs. Morris Animal Foundation. \$95,380. 1994-1998.
14. SA Brown, DR Finco, CA Brown, WA Crowell. Antihypertensive therapy in cats with renal disease. The Winn Feline Foundation. \$9,625.

15. SA Brown, CA Brown, WA Crowell, G Jacobs, J Styles. Effect of antihypertensive therapy on the progression of chronic renal disease in dogs. Novartis. \$200,000. 1997-1998.
16. MP Doyle, BG Harmon, CA Brown. Development of a species specific probiotic and vaccine candidate for *E. coli* O157:H7 in cattle. American Meat Institute Foundation. \$1,000,000. 1994-1996.
17. SA Brown, DR Finco, CA Brown, WA Crowell, JA Barsanti. Effects of dietary lipids on the kidney and blood pressure regulation in dogs with chronic renal disease. The Iams Company. \$128,799. 1994-1996.
18. SA Brown, DR Finco, JA Barsanti, WA Crowell, CA Brown. Effect of dietary fatty acid composition on systemic arterial pressure in cats. Ralston Purina Company. \$43,879. 1995-1996.
19. SA Brown, DR Finco, JA Barsanti, WA Crowell, CA Brown. Potential benefits of enalapril in dogs with chronic renal failure. The Merck Company. \$79,250. 1995-1996.
20. CA Brown, BG Harmon, MP Doyle, T Zhao. Development of an immunohistochemical technique to detect *E. coli* O157:H7 in formalin-fixed tissues. Veterinary Medical Experiment Station. \$2,000. 1995.
21. CA Brown. University of Georgia Research Foundation, Foreign Travel Assistance to London, England. \$744. 1995.
22. CA Brown, AW Roberts. Experimental *Leptospira grippotyphosa* infection in the dog. Rhone-Merieux, Inc. \$2,500. 1995.
23. SA Brown, CA Brown. Effects of dietary sodium and chronic renal failure on blood pressure in cats. Veterinary Medical Experiment Station. \$7,432. 1994-1995.
24. SA Brown, DR Finco, JA Barsanti, CA Brown. A method for early detection of renal disease in cats. RH Winn Foundation. \$3,940. 1994-1995.
25. SA Brown, WA Crowell, CA Brown, JA Barsanti. Role of dietary lipids in the progression of feline renal disease. Morris Animal Foundation. \$49,939. 1993-1995.
26. GM Baxter, PO Mueller, CA Brown. Effects of epidermal growth factor on clean full-thickness leg wounds in ponies. Veterinary Medical Experiment Station. \$2,462. 1990.
27. J Halper, CA Brown, J Wunderlich. Purification and characterization of a novel transforming growth factor. Veterinary Medical Experiment Station. \$6,710. 1988.
28. WA Crowell, CA Brown. Further investigation into familial renal disease in Chow Chow dogs. Companion Animal Research Fund. \$350. 1986.

3.3. Publications

3.3.1. Book chapters, Monographs, and Reviews

1. Brown CA. Renal Pathology. In Bartges J and Polzin D (eds) Nephrology and Urology of Small Animals, Blackwell Publishers, 2011.
2. Baker SS, Brown CA, Bruckner JV, Kaskel FJ, Martos P. External Peer Review of the FDA/CFSAN Draft Report Interim Safety and Risk Assessment of Melamine and its Analogues in Food for Humans (October 3, 2008) and Update (November 28, 2008), July 2009.
<http://www.fda.gov/Food/FoodSafety/FoodContaminantsAdulteration/ChemicalContaminants/Melamine/ucm174165.htm>
3. Vaden SL, Brown CA. In Bonagura and Twedt (eds) Kirk's Current Veterinary Therapy XIV Chapter 188, p863-868, Saunders Elsevier Publishers, 2009.
4. Vaden SL, Brown CA. Renal biopsy. In Elliot J and Grauer G (eds) Manual of Canine and Feline Nephrology and Urology. Second ed. British Small Animal Veterinary Association, 2007.
5. Greene CE, Sykes JE, Brown CA, Hartmann K. Leptospirosis. Infectious Diseases of the Dog and Cat, Third Edition. CE Greene, ed. W.B. Saunders Company, Philadelphia, PA, p 402-417, 2006.
6. Greene CE, Miller MA, Brown CA. Leptospirosis. Infectious Diseases of the Dog and Cat, Second Edition. CE Greene, ed. W.B. Saunders Company, Philadelphia, PA, 1998, 273-281.
7. Finco DR, Brown SA, Brown CA, Crowell WA, Sunvold SD, Cooper TA. Influence of protein and energy in cats with renal failure. Recent Advances in Canine and Feline Nutrition, Volume II, GA Reinhart and DP Carey, eds. Orange Frazer Press, Wilmington, Ohio, 1998, 413-424.
8. Finco DR, Brown CA. Primary tubulointerstitial disease of the kidney. Canine and Feline Nephrology and Urology, CA Osborne and DR Finco, eds. Williams and Wilkins, Philadelphia, 1995, 386-391.
9. Brown CA, Harmon BG, Zhao T, Doyle MP. Healthy animals as carriers of STEC. Verocytotoxigenic E. coli, G Duffy, Garvey P, and D McDowell, eds. Food & Nutrition Press Inc, 2001, 263-278.
10. Harmon BG, Doyle MP, Brown CA, Zhao T, Tkalcic S, Mueller E, Parks AH, Jacobsen K. Faecal shedding and rumen proliferation of Escherichia coli O157:H7 in calves: an experimental model. Escherichia coli O157:H7 in Farm Animals, CS Stewart and HJ Flint, eds. CABI Publishing, New York, NY, 1999, 59-70.

3.3.2 Presentations/abstracts

1. Schmiedt CW; Cogar SM, **Brown CA**; Vandenplas M; Hurley DJ, Spironolactone administration in a rodent model of chronic allograft nephropathy. Advanced Renal Therapies Symposium, New York, New York. February 2012, Podium Presentation. Proceedings, Advanced Renal Therapies Symposium, page 129.
2. Schmiedt CW, **Brown CA**, Hurley DJ, Brown SA. In vivo warm renal ischemia as model of acute tubular injury in cats. Advanced Renal Therapies Symposium, New York, New York, February, 2012. Podium Presentation. Proceedings, Advanced Renal Therapies Symposium, page 130.
3. Brown CA. Keynote speaker: Renal Pathology. AAZV Zoo and Wildlife Pathology workshop. October 24, 2010, South Padre Island, Texas.
4. Brown CA. Renal Ultrastructure. *In Basic ultrastructure and ultrastructural pathology for veterinary pathology residents and pathologists*. January 23-24, 2010, University of Georgia College of Veterinary Medicine Continuing Education Course.
5. Chakrabart S, Syme H, Brown CA, Elliot. Relationship between histopathological lesions and renal function in cats with chronic kidney disease. September, 2009, ECVIM, Porto, Portugal.
6. Brown CA and Brown SA. Grand rounds: Acute renal disease. Red Bank Veterinary Hospital, Tinton NJ, May 2009.
7. Brown CA, Berridge B (Co-chairs), Lees G, Vaden SL, Clubb F. A contemporary approach to renal biopsy pathology in veterinary medicine. 2008 ACVP annual meeting, Nov 2008.
8. Brown CA. Pathology of glomeruli in primary and secondary glomerular disease, ACVP, 2008.
9. Brown CA. Evaluation of the Renal Biopsy. Advanced Renal Therapies Symposium, Animal Medical Center of NY, March 8, 2008.
10. Brown CA. Pathology of Acute Renal Injury. Advanced Renal Therapies Symposium, Animal Medical Center of NY, March 8, 2008.
11. Brown CA. Pathology of Glomerular Disease. Advanced Renal Therapies Symposium, Animal Medical Center of NY, March 8, 2008.
12. Brown CA. Pathology of Chronic Renal Disease. Advanced Renal Therapies Symposium, Animal Medical Center of NY, March 8, 2008.
13. Brown CA, Lees G. Laboratory Session: Renal Biopsy Case Studies. Advanced Renal Therapies Symposium, Animal Medical Center of NY, March 9, 2008.

14. Jeong K-S, Hoff B, Brown CA, Park J-K, Jeong W-I, Do S-H, Jeong D-H, Chung J-Y, Hong I-H, Goo M-J, Yang H-J, Yuan D-W, Lee H-R, Hwang O-K, Han J-Y, Hong K-S, Son Y-S, Cho E-M, Ki M-R. Canine renal failure in dogs associated with melamine and cyanuric acid. The Korean Society of Veterinary Science, November 2007.
15. Brown C, Vaden S. Renal biopsy: who, when, and how. American College of Veterinary Internal Medicine, Seattle, WA, June 6-9, 2007.
16. Berridge B, Brown C, Lees G, Vaden S. Renal biopsy: case analysis as a clinician-pathologist partnership. American College of Veterinary Internal Medicine, Seattle, Washington, June 6-9, 2007.
17. Brown CA, Evaluation of the renal biopsy, Kansas State College of Veterinary Medicine, May 2007.
18. Ellis AE, Brown CA. Menu pet food associated renal failure in a cat. 35th Annual Southeastern Veterinary Pathology Conference, May 2007.
19. TP LaBranche, M Randolph, **CA Brown**, J Mysore Polycystic liver & kidney disease in two related Beagles: an investigation of pathogenesis. American College of Veterinary Pathologists, Tuscan, Arizona, December, 2006.
20. Ellis AE, **Brown CA**, Green N. Gastric cryptosporidiosis in a dog. 34th Annual Southeastern Veterinary Pathology Conference, Tifton, GA, 2006.
21. Fletcher M, **Brown CA**, Syme H, Brown SA and J. Elliot. Histological assessment of renal pathology in treated hypertensive and normotensive azotaemic cats, European College of Veterinary Internal Medicine, Barcelona, Spain, September, 2004.
22. **Brown CA**. Naturally occurring leptospirosis in dogs. Kansas State University College of Veterinary Medicine, May, 2004.
23. **Brown CA**, Roberts AW, Drum D, Greene C, Sanchez S, Reed T. Clinical syndromes associated with leptospirosis in dogs. 28th World Congress of the World Small Animal Veterinary Association, Bangkok, Thailand, October 24-27, 2003.
24. **Brown CA**, Sanchez S, Bartlett P. Colibacillosis in a rabbit. 29th Annual Southeastern Veterinary Pathology Conference, Tifton, GA, 2001.
25. Tkalcic S, **Brown CA**, Harmon BG, Jain AV, Mueller E, Parks A, Jacobsen, Martin SA, Zhao T, Doyle MP: Effects of diet on the proliferation and acid tolerance of *E. coli* O157:H7 in rumen fluid. Conference on Emerging Diseases: Veterinary Medicine, Agriculture, and Human Health, Athens, GA, August 12-14, 1999.
26. Greene C, Roberts W, **Brown C**, Baldwin C. Leptospirosis in the Southeastern USA, Emergence or Recognition. Canine Infectious Diseases from Clinics to Molecular Pathogenesis, New York State Veterinary College, Ithaca, NY, August 12-14, 1999.

27. **Brown CA**, Harmon BG, Tkalcic S, Zhao T, Doyle MP: Effect of diet and rumen microenvironment on the proliferation and fecal shedding of *E. coli* O157:H7 in calves. Proceedings International Association of Milk, Food, and Environmental Sanitarians, Inc. Nashville, TN, August 16-19, 1998.
28. Harmon BG, **Brown CA**, Zhao T, Tkalcic S, Mueller E, Parks A, Jacobsen K, Doyle MP. Fecal shedding and rumen proliferation of *Escherichia coli* O157:H7 in calves: An experimental model. Proceedings International Workshop on Farm Animals as a Reservoir for *Escherichia coli* O157:H7. Rowett Research Institute, Aberdeen, Scotland, April 6-7, 1998.
29. **Brown CA**, Llewallyn SJ, Roberts AW, Greene CE, Tweedell DD. An outbreak of leptospirosis in a kennel of foxhounds. Proceedings 40th Annual Meeting of the American Association of Veterinary Laboratory Diagnosticicians, Louisville, KY, October 17-21, 1997.
30. Fischer JR, Doyle MP, Zhao T, **Brown CA**, Sewell, CT. Experimental inoculation of white-tailed deer with *Escherichia coli* O157:H7. Proceedings 40th Annual Meeting of the American Association of Veterinary Laboratory Diagnosticicians, Louisville, KY, October 17-21, 1997.
31. **Brown CA**. Functional consequences of renal morphologic lesions. Third Annual ASVCP Education Session – The Kidney: Function and Failure, Atlanta, GA, November 12, 1995.

3.3.3 Journal articles:

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3.3.4 Abstracts:

*abstracts with a published counterpart
**invited

1. Fletcher M, Brown CA, Syme H, Brown SA and J. Elliot. Histological assessment of renal pathology in treated hypertensive and normotensive azotaemic cats, European College of Veterinary Internal Medicine, Barcelona, Spain, September, 2004.

2. ****Brown CA.** Naturally occurring leptospirosis in dogs. Kansas State University College of Veterinary Medicine, May, 2004.
3. **Brown CA**, Roberts AW, Drum D, Greene C, Sanchez S, Reed T. Clinical syndromes associated with leptospirosis in dogs. 28th World Congress of the World Small Animal Veterinary Association, Bangkok, Thailand, October 24-27, 2003.
4. **Brown CA**, Sanchez S, Bartlett P. Colibacillosis in a rabbit. 29th Annual Southeastern Veterinary Pathology Conference, Tifton, GA, 2001.
5. Tkalcic S, **Brown CA**, Harmon BG, Jain AV, Mueller E, Parks A, Jacobsen, Martin SA, Zhao T, Doyle MP: Effects of diet on the proliferation and acid tolerance of *E. coli* O157:H7 in rumen fluid. Conference on Emerging Diseases: Veterinary Medicine, Agriculture, and Human Health, Athens, GA, August 12-14, 1999.
6. Greene C, Roberts W, **Brown C**, Baldwin C. Leptospirosis in the Southeastern USA, Emergence or Recognition. Canine Infectious Diseases from Clinics to Molecular Pathogenesis, New York State Veterinary College, Ithaca, NY, August 12-14, 1999.
7. ***Brown CA**, Harmon BG, Tkalcic S, Zhao T, Doyle MP: Effect of diet and rumen microenvironment on the proliferation and fecal shedding of *E. coli* O157:H7 in calves. Proceedings, International Association of Milk, Food, and Environmental Sanitarians, Inc. Nashville, TN, August 16-19, 1998.
8. *Harmon BG, **Brown CA**, Zhao T, Tkalcic S, Mueller E, Parks A, Jacobsen K, Doyle MP. Fecal shedding and rumen proliferation of *Escherichia coli* O157:H7 in calves: An experimental model. Proceedings International Workshop on Farm Animals as a Reservoir for *Escherichia coli* O157:H7. Rowett Research Institute, Aberdeen, Scotland, April 6-7, 1998.
9. ***Brown CA**, Llewallyn SJ, Roberts AW, Greene CE, Tweedell DD. An outbreak of leptospirosis in a kennel of foxhounds. Proceedings 40th Annual Meeting of the American Association of Veterinary Laboratory Diagnosticicians, Louisville, KY, October 17-21, 1997.
10. Fischer JR, Doyle MP, Zhao T, **Brown CA**, Sewell, CT. Experimental inoculation of white-tailed deer with *Escherichia coli* O157:H7. Proceedings 40th Annual Meeting of the American Association of Veterinary Laboratory Diagnosticicians, Louisville, KY, October 17-21, 1997.
11. ****Brown CA.** Functional consequences of renal morphologic lesions. Third Annual ASVCP Education Session -- The Kidney: Function and Failure, Atlanta, GA, November 12, 1995.

3.3.5 Creative contributions other than formal publications

PathMaster, Lesion Identification and Interpretation, Kelley LC, Brown CA, Mahaffey EA, 1994.

PathMaster is software designed to complement and facilitate the use of the International Veterinary Pathology Slide Bank laser videodisc. A book containing material similar to that in the software is included. PathMaster has been purchased by numerous individuals and institutions, both in the US and internationally. PathMaster is currently being updated and changed to CD-ROM format.

4. TEACHING ACTIVITIES:

4.1. Continuing Education for Practicing Veterinarians:

1. Cathy Brown, DACVP, University of Georgia; Denise Elliott, DACVIM and DACVN, Royal Canin US; Dru Forrester, DACVIM, Hill's Pet Nutrition; Dr. Claudia Kirk, DACVIM and DACVN, University of Tennessee; Kimberly May, DACVS, Communications, AVMA; Paul Pion, DACVIM (cardiology), VIN; Linda Ross, DACVIM, Tufts University; Shelly Vaden, DACVIM, North Carolina State University, Dr. Kurt Weingand, P & G Pet Care ACVIM Pet Food Recall Panel, American College of Veterinary Internal Medicine, Seattle, WA, June 9, 2007.
3. Sample submission in suspected foreign animal disease outbreaks. Athens Veterinary Diagnostic Laboratory Shortcourse, August 2001.
4. Feline Sarcoma Update, Athens Veterinary Diagnostic Laboratory Continuing Education Seminar, August 1997.
5. Escherichia coli O157:H7 infection in cattle, Athens Veterinary Diagnostic Laboratory Continuing Education Seminar, August 1995.
6. Canine Leptospirosis, Athens Veterinary Diagnostic Laboratory Continuing Education Seminar, August 1994.
7. Necropsy techniques in small animals: What is it and what does it mean?, Athens Veterinary Diagnostic Laboratory Continuing Education Seminar, August 1993.

8. Diagnosis of enteric diseases in small animals, Athens Veterinary Diagnostic Laboratory Continuing Education Seminar, August 1992.